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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,648	09/19/2003	Martin Lund	14214US02	6075

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EXAMINER	
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ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/665,648	LUND ET AL.	
	Examiner	Art Unit	
	Man Phan	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment and Argument

1. This communication is in response to applicant's 09/07/2006 Amendment in the application of Lund et al. for a "Method and system to provide blade server load balancing using spare link bandwidth" filed 09/19/2003. This application is a CIP of 10/454,012 filed 06/04/2003, and is a CIP of 10/454,273 filed 06/04/2003 is now U.S. Patent #6,859,154. The amendment and response has been entered and made of record. Claims 1-25 are pending in the application.

2. Applicant's remarks and argument to the rejected claims are insufficient to distinguish the claimed invention from the cited prior arts or overcome the rejection of said claims under 35 U.S.C. 103 as discussed below. Applicant's argument with respect to the pending claims have been fully considered, but they are not persuasive for at least the following reasons.

3. In response to applicant's argument that the combination of cited references fails to present a prima facie case of obviousness. In response, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). It is not necessary that a "prima facie" case of unpatentability exist as to the claim in order for "a substantial new question of patentability" to be present as to the claim. Thus, "a substantial new question of patentability" as to a patent claim could be present even if the examiner would not necessarily reject the claim as either fully anticipated by, or obvious in view

of, the prior art patents or printed publications. As to the importance of the difference between "a substantial new question of patentability" and a "prima facie" case of unpatentability see generally In re Etter, 756 F.2d 852, 857 n.5, 225 USPQ 1, 4 n.5 (Fed. Cir. 1985). Also, See MPEP § 2141.01(a) for a discussion of analogous and nonanalogous art in the context of establishing a prima facie case of obviousness under 35 U.S.C. 103. See MPEP § 2131.05 for a discussion of analogous and nonanalogous art in the context of 35 U.S.C. 102. 904.02.

In response to Applicant's argument that there is no suggestion to combine the references, i.e., Romero (US#2004/0054780) and Garnett et al. (US#7,032,037) as proposed in the office action. The Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971). It must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The Examiner emphasizes for the record that the claims employ a broader in scope than the Applicant's disclosure in all aspects. In addition, the Applicant has not argued any narrower interpretation of the claim limitations, nor amended the claims significantly enough to construe a

narrower meaning to the limitations. Since the claims breadth allows multiple interpretations and meanings, which are broader than Applicant's disclosure, the Examiner is required to interpret the claim limitations in terms of their broadest reasonable interpretations while determining patentability of the disclosed invention. See MPEP 2111. In other words, the claims must be given their broadest reasonable interpretation consistent with the specification and the interpretation that those skilled in the art would reach. See *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000), *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999), and *In re American Academy of Science Tech Center*, 2004 WL 1067528 (Fed. Cir. May 13, 2004). Any term that is not clearly defined in the specification must be given its plain meaning as understood by one of ordinary skill in the art. See MPEP 2111.01. See also *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989), *Sunrace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003), *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003). The interpretation of the claims by their broadest reasonable interpretation reduces the possibility that, once the claims are issued, the claims are interpreted more broadly than justified. See *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). Also, limitations appearing in the specification but not recited in the claim are not read into the claim. See *In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).*

As it's known in the art, Blade servers, which share a common high-speed bus, are designed to create less heat and thus save energy costs as well as space. Large data centers and Internet service providers (ISPs) that host Web sites are among companies that use blade servers. A blade server is sometimes referred to as a high-density server and is typically used in a

clustering of servers that are dedicated to a single task, such as: file sharing, Web page serving and caching, SSL encrypting of Web communication, transcoding of Web page content for smaller displays, Streaming audio and video content, scientific computing, financial modeling, etc. Like more traditional clustered servers, blade servers can also be managed to include load balancing and failover capabilities. Load balancing is dividing the amount of work that a blade server has to do between two or more blade servers so that more work gets done in the same amount of time and, in general, all users get served faster. Load balancing may be implemented with hardware, software, or a combination of both. Typically, load balancing is the main reason for blade server clustering. Failover is a backup operational mode in which the functions of a primary blade server are assumed by a secondary blade server when the primary blade server becomes unavailable through either future or scheduled down time.

Furthermore, the use of a "Traffic Management Device" (TMD) for a load balancing appliance, which will route traffic to one or more of the blade servers in a pool of blade servers using some predefined mechanism, such as round-robin, least-loaded, or any of the like are well known in the art. A "Traffic Management Device" (TMD) functions as a routing device for a request for service, and directs request for service to an appropriate blade server that is capable of service any particular request for service.

Therefore, the failure to significantly narrow definition or scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims in parallel to the Applicant in the response and reiterates the need for the Applicant to distinctly define the claimed invention. Since no substantial amendments have been made and the Applicant's

arguments are not persuasive, the claims are drawn to the same invention and the text of the prior art rejection can be found in the previous Office Action. Therefore, the Examiner maintains that the references cited and applied in the last office actions for the rejection of the claims are maintained in this office action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romero (US#2004/0054780) in view of Garnett et al. (US#7,032,037).

With respect to claims 13-15 and 23, the references disclose a novel system and method for controlling the capacity utilization of the servers, according to the essential features of the

claims. Romero (US#2004/0054780) discloses a system and method for automatically allocating computing resources of a rack-and-blade computer assembly for meeting quality of service requirements. The method comprises receiving server performance information from an application server pool disposed in a rack of a rack-and-blade computer assembly, determining at least one QoS attribute (e.g., an aggregate of QoS attributes) for the application server pool, determining that the QoS attribute is below a standard, and allocating for use by the application server pool a blade server from a free server pool. The method may additionally comprise selecting, prior to allocating for use, a blade server from a free server pool to obtain a selected blade server, and preparing, prior to allocating for use, the selected blade server for operation with the application server pool. The method may further additionally comprise reconfiguring a traffic management device associated with the application server pool ([0021]-[0025]). Romero further discloses in Fig. 3 a schematic diagram of the management server containing the rapid deployment system and communicatively engaged to the image repository and to blade servers of an application server pool, in which management server 14, as indicated, communicates with each of the blade servers 34 as well as their associated server agents 35a. A server agent 35a measures performance of the application running on its associated blade server 34a. The measurement may be done at the hardware level, for example, CPU and memory utilization, or at the application level, using application-specific measurements. A standard mechanism such as Web-based Enterprise Management (WBEM) or Systems Network Monitoring Protocol (SNMP) may be used to communicate this information from any server agent 35a to the management server 14. The server agent 35a may also transmit alarms (e.g., SNMP traps) asynchronously to

the management server 14. The server agents 34a may contain application-specific components to measure any desired application-level performance ([0046]-[0049]).

However, Romero (US#2004/0054780) does not expressly disclose the capability to perform blade server load balancing functions. In the same field of endeavor, Garnett et al. (US#7,032,037) provide a server blade comprising at least one processor and at least one communications port. The communications port may be operable to receive an information message and the processor may be operable to compare the received information message to a predetermined set of possible destinations to select a destination. The communications port may be further operable to transmit the information message to the selected destination. The server blade can be configured as a field replaceable unit. This arrangement provides a load balancer module configured to take the place of a standard server blade within a modular computer system to provide a load balancing service to that modular computer system (See Figs. 1 & 15; Col. 2, lines 5 plus)

It's noted that, Blade server is a clustering type of network server that is characterized by the use of a circuit board enclosure to integrate a cluster of server modules (commonly called "blades"), with all of these server modules providing the same server functionality. In other words, a blade server can respond to a client's request by linking any one of the clustered server modules to the client. In practical implementation, each server module is made into a single circuit board (i.e., blade), which can be easily fitted to the blade server's enclosure to increase the blade server's client serving capacity. Moreover, a blade server is typically equipped with a common management control module for controlling all the operations of the multiple server modules and their shared resources in the blade server. Blade server configurations are

particularly efficient because each of the blade servers share centralized resources within the chassis such as fans, power supplies, Ethernet switching, and server management hardware. With respect to server management, a unified management module ("UMM") is configured to perform central management functions for the entire cluster of blade servers.

Regarding claims 16-19, while blade server technology changed the way in which servers were utilized and managed, on the client side (e.g., at the desktop level), things remained essentially the same. That is, each workstation still consisted of a desktop PC coupled, wirelessly or via Ethernet cables, to the "server farm" where the blade servers were stored. Furthermore, blade servers must integrate all their I/O controllers/devices onboard because they do not have an external bus which would allow them to interface to other I/O controllers/devices. Consequently, a typical blade server must provide such I/O controllers/devices as Ethernet (e.g., 10/100 and/or 1 Gb) and data storage control (e.g., SCSI, Fiber Channel, etc.)--all onboard (See Fig. 1 of Garnett et al).

Regarding claims 20-22, 24-25, Garnett further teaches in Fig. 15 a functional block diagram showing the external connectivity of the shelf in Fig. 2, in which Workload distribution management (load balancing) provides operational efficiency benefits to server systems where more than one server is utilised. Load balancing is the process of distributing new connections to a group of servers between those servers in a controlled fashion. By means of such controlled distribution of new connections, the speed of service experienced by a requesting computer can be increased. Load balancing algorithms can work in a variety of ways to attempt to distribute new connections most efficiently. The most simple load balancing algorithm is a "round robin" system whereby a load balancer allocates new connections according to a circular list of

available servers. Thus a first incoming new connection is allocated to a given server and each new connection received thereafter is allocated to the next server in the list, returning to the first server when the end of the list is reached (Col. 32, lines 4 plus).

With respect to claims 1-12, they are method claims corresponding to the apparatus claims 13-25 as discussed in paragraph above. Therefore, claims 1-12 are analyzed and rejected as previously discussed with respect to claims 13-25.

One skilled in the art of communications would recognize the need for a load balancing in a multi server platform, and would apply Garnett's novel use of the blade server load balancing algorithm into Romero's system and method for automatically allocating computer resources of a rack and blade computer assembly. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Garnett's server blade for performing load balancing functions into Romero's dynamic adaptive server provisioning for blade architectures with the motivation being to provide a system and method to provide blade server load balancing.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Pettey et al. (US#7,046,668) shows a method and apparatus for shared I/O a load/store fabric.

The Pettey et al. (US#7,219,183) shows the switching apparatus and method for providing shared I/O within a load store fabric.

The McGraw et al. (US#2002/0188718) show a console information storage system and method.

8. **THIS ACTION THIS ACTION IS MADE FINAL.** See MPEP ' 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel, can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

Nov. 20, 2007

Man U Phan

MAN U. PHAN
PRIMARY EXAMINER